

1           1. A method of coating solder ball and wire bond  
2         bond pads comprising:

3                 masking said solder ball bond pads; and  
4                 coating gold on said wire bond bond pads with  
5         said solder ball bond pads masked.

1           2. The method of claim 1 including providing a  
2         different gold coating thickness on said solder ball bond  
3         pads and said wire bond bond pads.

1           3. The method of claim 2 including providing a  
2         thicker gold coating on said wire bond bond pads than on  
3         said solder ball bond pads.

1           4. The method of claim 3 including providing a gold  
2         coating, on said wire bond bond pads, having a thickness of  
3         about .5 microns and providing a solder ball bond pad gold  
4         coating of approximately .1 to .3 microns in thickness.

1           5. The method of claim 1 including nickel coating  
2         said solder ball and said wire bond bond pads at the same  
3         time before coating said wire bond bond pads with gold.

1           6. The method of claim 1 including coating said wire  
2         bond bond pads with a first gold coating and coating both

3       of said solder ball bond pads and said wire bond bond pads  
4       with a second gold coating.

1           7.     The method of claim 6 wherein said second gold  
2       coating is thinner than said first gold coating.

1           8.     The method of claim 1 including using an  
2       electroless plating technique to coat gold on said wire  
3       bond bond pads.

1           9.     The method of claim 1 including forming a  
2       laminate structure having solder ball bond pads and wire  
3       bond bond pads on the same surface.

1           10.    The method of claim 1 wherein said solder ball  
2       bond pads are gold coated in a single step.

1           11.    The method of claim 10 including coating said  
2       solder ball bond pads and said wire bond bond pads while  
3       the other of said solder ball and wire bond bond pads is  
4       masked.

1           12.    A method of coating two different types of bond  
2       pads on the same surface comprising:  
3               masking off a first type of bond pad; and

4                   coating a metal on the second type of bond pad  
5   with said first type of bond pad being masked.

1                 13. The method of claim 12 including masking solder  
2   ball bond pads.

1                 14. The method of claim 13 including coating metal on  
2   wire bond bond pads.

1                 15. The method of claim 14 including coating gold on  
2   said wire bond bond pads.

1                 16. The method of claim 15 including unmasking said  
2   solder ball bond pads and coating a metal on both said wire  
3   bond bond pads and said solder ball bond pads.

1                 17. The method of claim 12 including providing  
2   different coating thicknesses on said first and second  
3   types of bond pads.

1                 18. The method of claim 12 including coating gold on  
2   said second type of bond pad.

1                 19. The method of claim 18 wherein said first type of  
2   bond pad is a solder ball bond pad and said second type of  
3   bond pad is a wire bond bond pad, coating gold on said wire

4 bond bond pad to a thickness of about .5 microns and  
5 coating gold on said solder ball bond pads to a thickness  
6 of about .1 to about .3 microns.

1 20. The method of claim 19 including nickel coating  
2 said first and second types of bond pads at the same time  
3 before coating said wire bond bond pads with said metal.

1 21. The method of claim 12 including coating both  
2 said first and second types of bond pads with said metal  
3 after coating said metal on said second type of bond pad.

1 22. The method of claim 12 including masking off said  
2 second type of bond pad and coating metal on said first  
3 type of bond pad.

1 23. A method of forming solder ball and wire bond  
2 bond pads comprising:  
3 forming a solder ball bond pad;  
4 coating gold over said solder ball bond pad;  
5 forming a wire bond bond pad; and  
6 coating gold over said wire bond bond pad to a  
7 thickness greater than said gold coating over said solder  
8 ball bond pad.

1           24. The method of claim 23 including masking said  
2 solder ball bond pad and coating gold on said wire bond  
3 bond pad with said solder ball bond pad masked.

1           25. The method of claim 24 including providing a gold  
2 coating on said wire bond bond pad having a thickness of  
3 about .5 microns.

1           26. The method of claim 23 including providing a gold  
2 coating on said solder ball bond pad of approximately .1 to  
3 .3 microns in thickness.

1           27. The method of claim 23 including coating said  
2 wire bond bond pads with a first gold coating and coating  
3 both of said solder ball and said wire bond bond pads with  
4 a second gold coating.

1           28. The method of claim 23 including coating said  
2 solder ball bond pad to a thickness of approximately .25  
3 microns.

1           29. A method of forming solder ball and wire bond  
2 bond pads comprising:  
3                 masking said solder ball bond pad;  
4                 coating gold over said wire bond bond pad;

5                   masking said wire bond bond pad; and  
6                   coating gold over said solder ball bond pad.

7

8                 30. The method of claim 29 including coating said  
9                 wire bond bond pad with gold to a thickness greater than  
10               the gold coating over said solder ball bond pad.

1                 31. A packaged integrated circuit device comprising:  
2                 a plurality of gold coated solder ball bond pads;  
3                 a plurality of gold coated wire bond bond pads;

4                 and

5                   the gold coating on said solder ball bond pads  
6                 being thinner than the gold coating on said wire bond bond  
7                 pads.

1                 32. The device of claim 31 wherein the thickness of  
2                 the gold on said solder ball bond pads is sufficiently low  
3                 to reduce the likelihood of solder ball joint  
4                 embrittlement.

1                 33. The device of claim 31 wherein said solder ball  
2                 bond pads have a gold coating having a thickness of between  
3                 about .1 and .3 microns.

1                 34. The device of claim 33 wherein said solder ball  
2                 bond pad gold coating has a thickness of about .25 microns.

1           35. The device of claim 33 wherein said wire bond  
2         bond pads have a gold coating thickness of approximately .5  
3         microns.

1           36. The device of claim 31 wherein said solder ball  
2         bond pads and said wire bond bond pads are all contained on  
3         the same planar surface.